November 2023-January 2024 Outlook: Perspective for the Lower Rio Grande Valley/Deep S. Texas Region

NATIONAL WEATHER SERVICE

October 24, 2023

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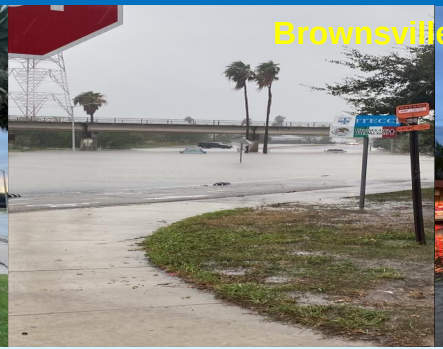
Some Rains Came in October. Will More Follow in November/beyond?

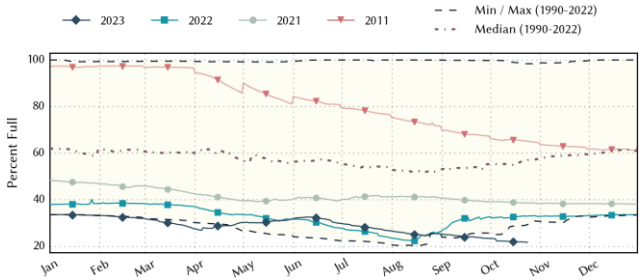

Brownsville, October 6


Brownsville, October 5

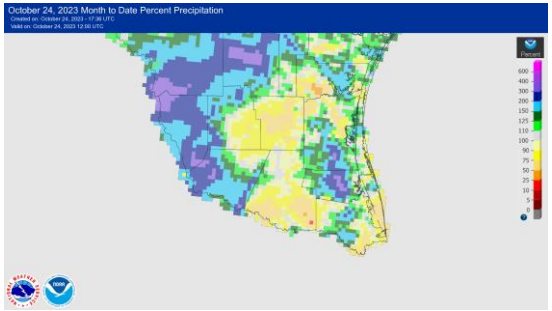

Low water levels, Falcon Reservoir (Aug. 2022); similar look in October 2023

October 2023: Some Heat Relief

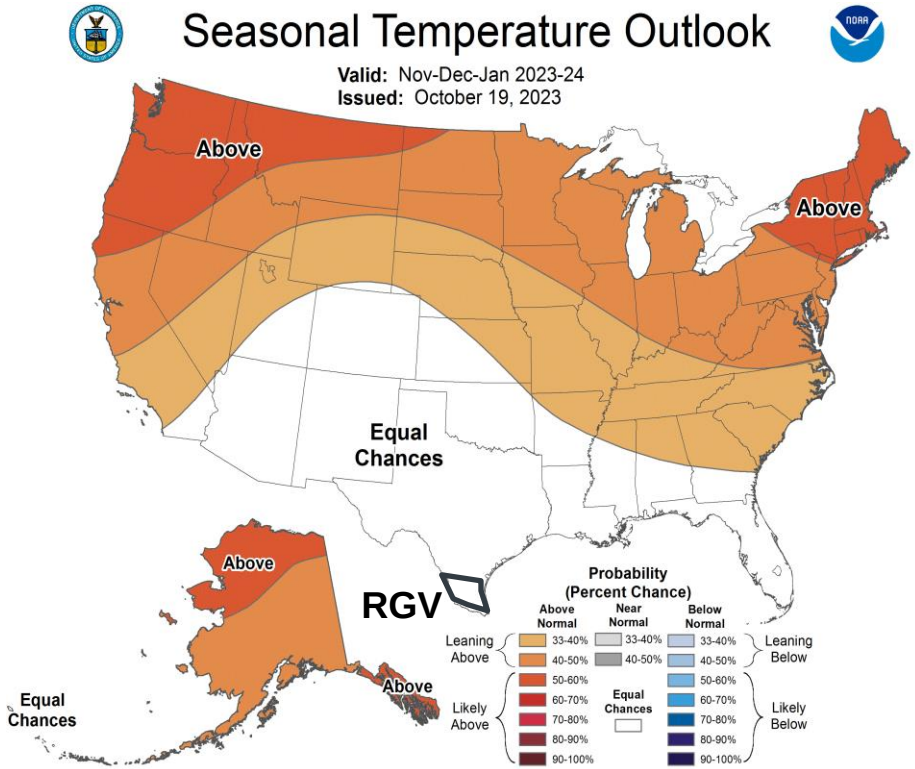
- The “heat dome” finally broke in early October, but the month was still warm overall.
- **Drought** improved a bit, but remained in place for most. Moderate to Severe (Levels 1 and 2) replaced Severe to Extreme (Level 3 of 4); some locations (Willacy County) removed drought altogether. No significant wildfires were reported.
- **Torrential Rains** between 3 and 5 inches fell in a couple hours from eastern Willacy through the Los Fresnos-west Brownsville area on the 5th, causing minor flooding but bringing green back to thirsty yards, gardens, and grass.
- The season’s **first true cold front** crossed the region around the 15th, with splendid conditions featuring low humidity, cool mornings, and pleasantly warm afternoons through the 19th. Relatively hot and humid conditions returned thereafter.
- Despite some helpful Valley rains, reservoirs that serve the region **remained at or below record** low levels for October, in 2023.

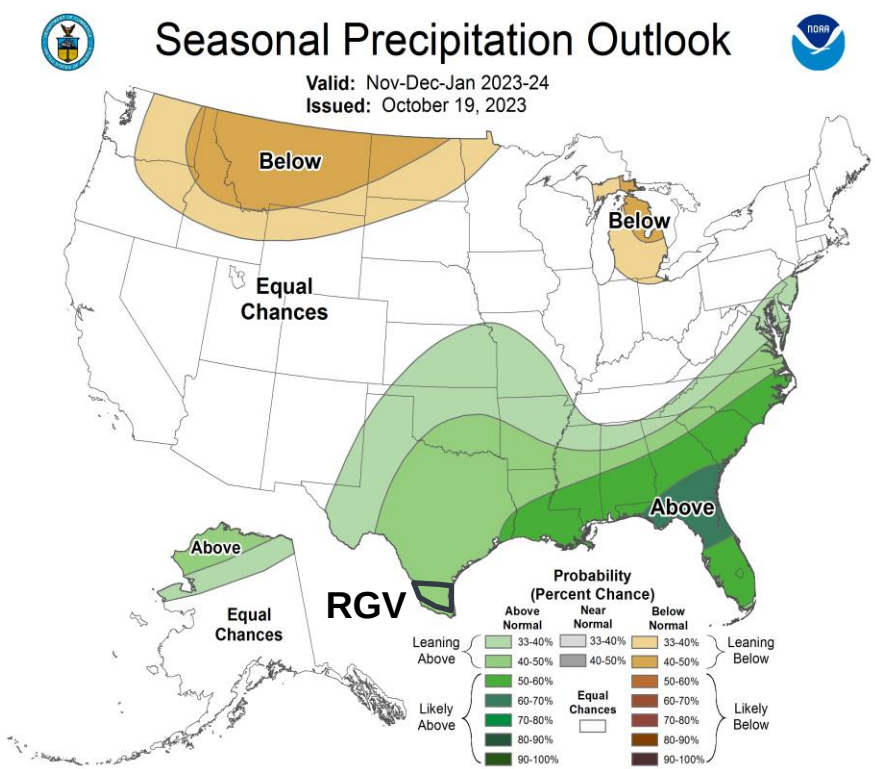


Texas share of Amistad, Falcon, Red Bluff Reservoirs. Credit: Texas Water Development Board,



Seasonal Forecast, November 2023-January 2024 - USA





Key Takeaways: November 2023-January 2024

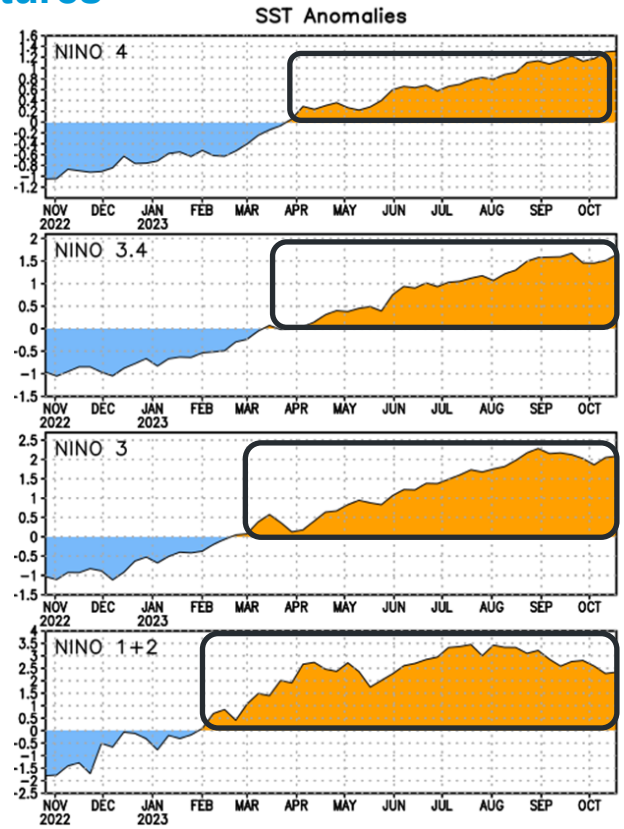
- Confidence is **medium** on whether temperatures will remain slightly above normal to close 2023 and begin 2024. Confidence is also **medium** on **drought persistence** (Moderate) into November and December. Strong El Niño suggests increasing chances for **welcome rain**, especially by December – but confidence remains **low-medium** based on other factors.
- Breakdown:
  - Late season El Niño influences will **determine the eventual "sense" of November-December 2023**. There are increased chances for **helpful rains** for both the basin and the Valley's detention/drainage system – but still a notable chance for **continued dryness**. Confidence is **medium** on either outcome.
  - Reservoir levels at Falcon were **at or near record lows for late October** – values not seen since 1956 and 2002. Inflows from additional rainfall should slowly increase reservoir levels; conversely, dry and warm periods could maintain modest evaporation rates through November. **Confidence is low on reservoir rises, but high on levels remaining well below average through January**.
  - **Slightly above average warmth** is favored for the period. **Record to near-record warmth is now likely** for all locations by the end of the year, following a near-record hot June-September period and an above average January-March.
  - **Stage 2 and 3 water conservation continued in more than a half-dozen RGV municipalities by the end of October. More communities will be added if sufficient rains don't come.**
  - **Will it freeze?** While cold fronts of the "gray, drizzly" variety are expected several times through January, a hard freeze (≤27°F) is unlikely. **A lesser freeze** or two may occur after December 15th, and **low wind chill** (**apparent temperature at or below 30ºF**) may occur one or two times as well.

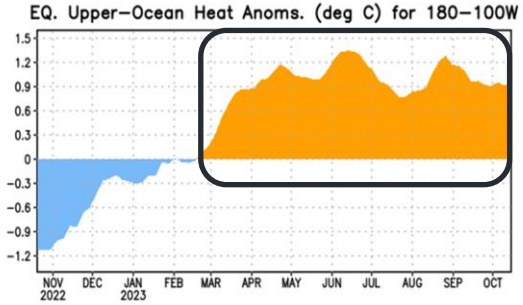
The "Why" of the Forecast: El Niño to Remain Moderate-Strong; uncertain early winter temperatures

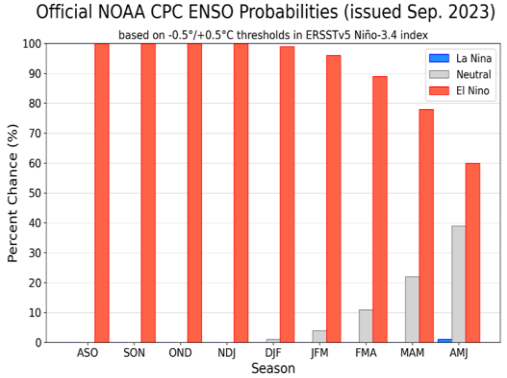
Year	DJF	JFM	FMA	MAM	AMJ	MJJ	JJA	JAS	ASO	SON	OND	NDJ
2021	-1.0	-0.9	-0.8	-0.7	-0.5	-0.4	-0.4	-0.5	-0.7	-0.8	-1.0	-1.0
2022	-1.0	-0.9	-1.0	-1.1	-1.0	-0.9	-0.8	-0.9	-1.0	-1.0	-0.9	-0.8
2023	-0.7	-0.4	-0.1	0.1	0.5	0.8	1.1	1.3				

- The strengthening El Niño combined with expected mid autumn atmospheric patterns and other "teleconnections" offers a lean toward warmer than average temperatures through November, uncertain thereafter
- Dryness/drought trends will range from potential elimination to status quo (dryness to severe level)…but **confidence is low-medium**.
- El Niño could begin to increase the subtropical jet (favored for precipitation) by Thanksgiving or sooner; if combined with cold fronts, **would assist in notable rainfall, especially in December.**

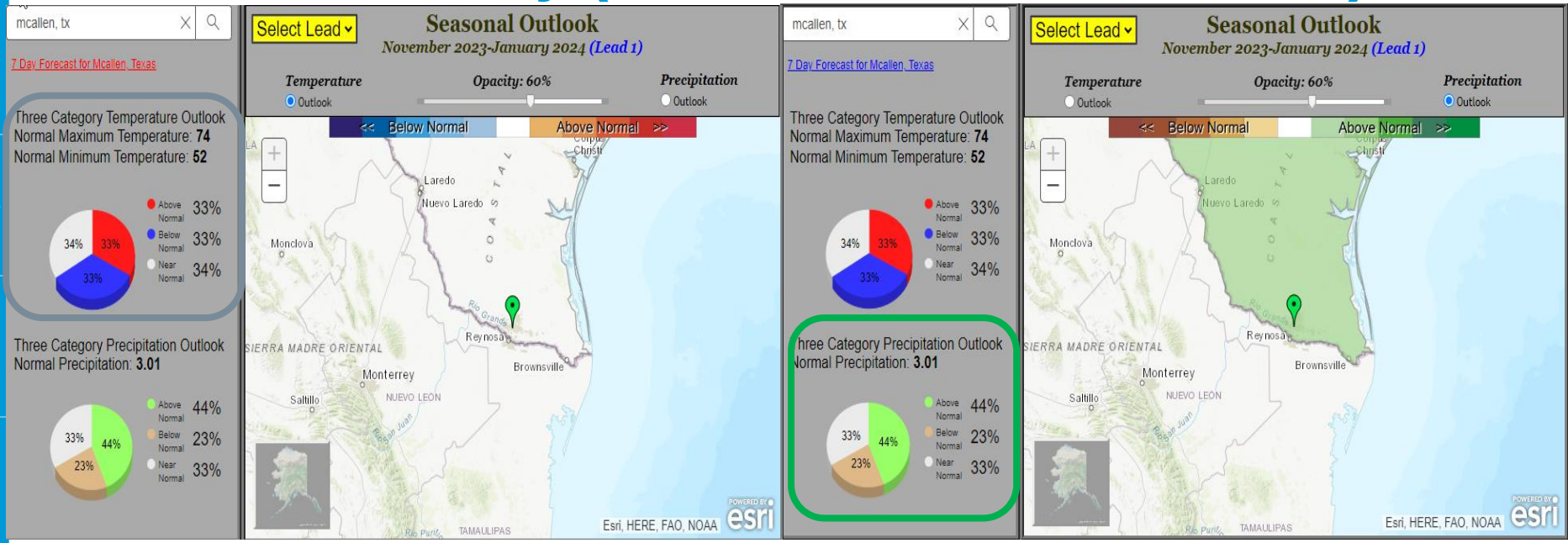
*Above right: Oceanic Niño Index. Values below -0.5 (light blue) indicate a 3-month La Niña episode. El Niño has a 71% chance of becoming strong (+1.5°C ONI, top right) by winter.





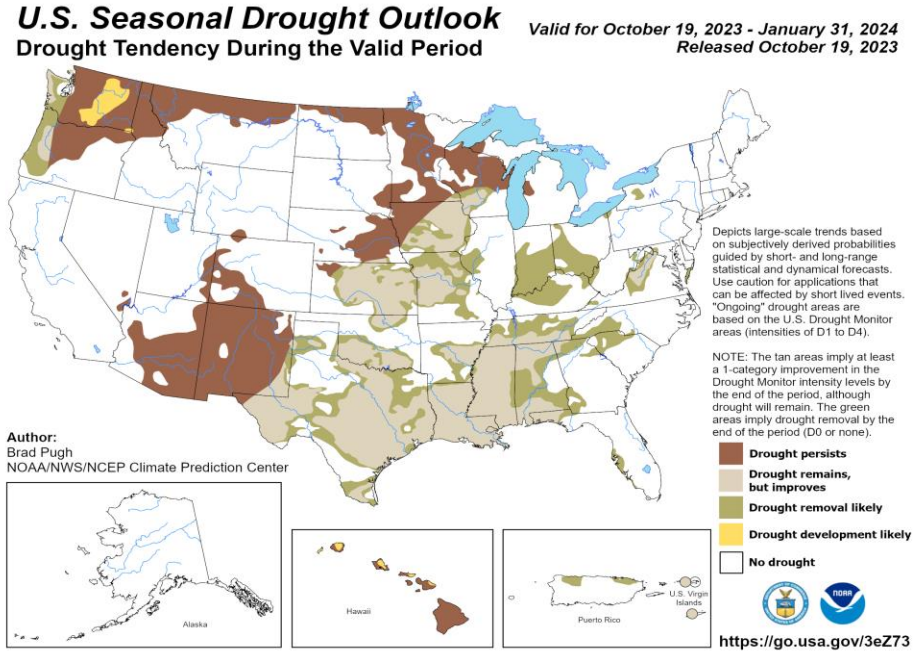


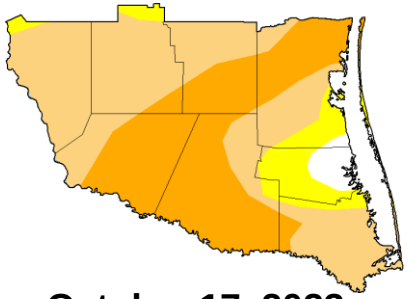
The November 2023-January 2024 Outlook: Rio Grande Valley (McAllen as Anchor Point)



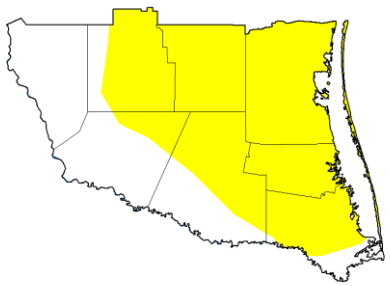
- Temperature: Equal chances for above, below, and average: RGV averages: Afternoon – Lower 80s, falling to around 70-lower 70s by the end of December through January. Morning: Lower 60s, falling to falling 47 to 52 by the end of December through the end of January.
- Precipitation: A **44 percent chance of above average**, a **23 percent chance for below average**. RGV averages: 2.7 to 4.5 inches (from west to east).

The November 2023-January 2024 "Droughtlook"





October 17, 2023



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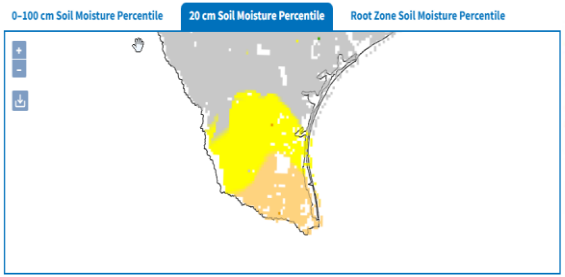
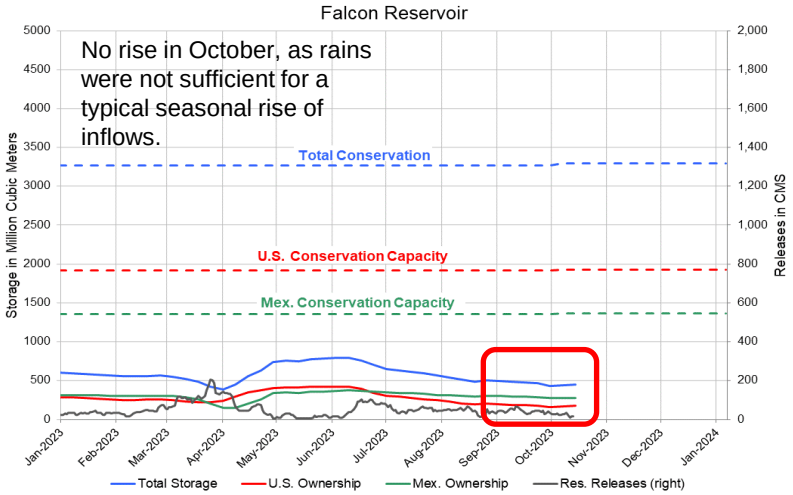


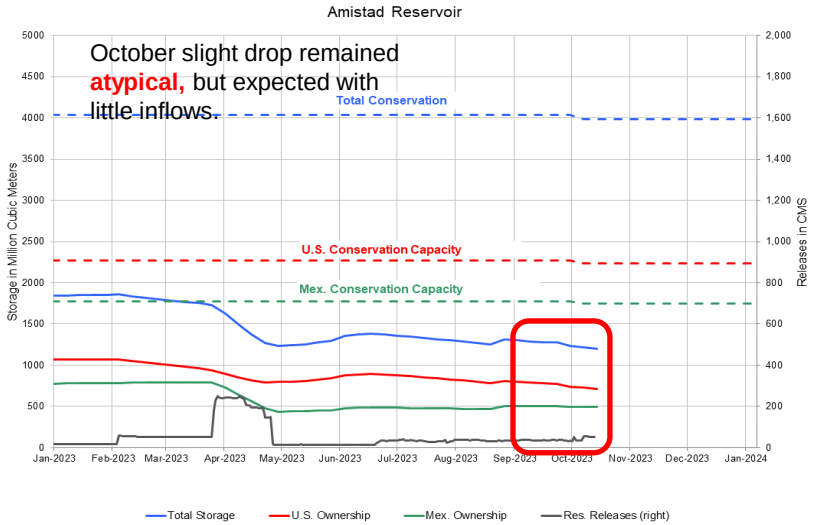
Drought Classification

- None
- D0 (Abnormally Dry)
- D1 (Moderate Drought)
- D2 (Severe Drought)
- D3 (Extreme Drought)
- D4 (Exceptional Drought)
- No Data

- **Drought improved modestly in October (right) but was still worse than a year prior.** 4" (depth) Soil moisture varied from 5 to near 30 percent average through most of October. Departure from average rainfall was mixed; Starr and Zapata were wet (150-300% of average) as was Willacy; elsewhere, rainfall was 50-90% of average – dry enough to maintain Severe Drought.
- **November remains uncertain** as upper level disturbances may bring occasional "coverage" rain events with fronts and/or tropical moisture feeds**. If rain falls**, drought will end for most, but remain in some areas (Hidalgo, for example), improving to "Moderate" (Level 1 of 4). If **rains are fleeting**, and post-frontal dry and warm weather returns, conditions will likely continue at **Moderate to Severe levels**.

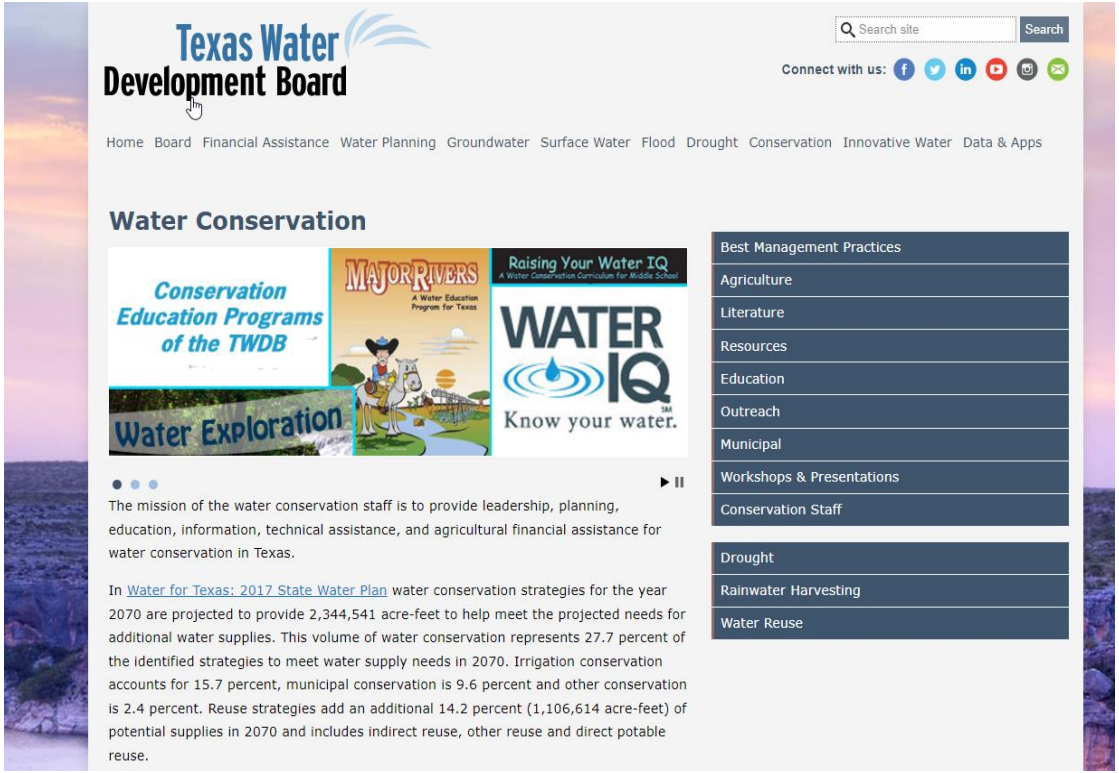
Falcon and Amistad remained at or near record lows





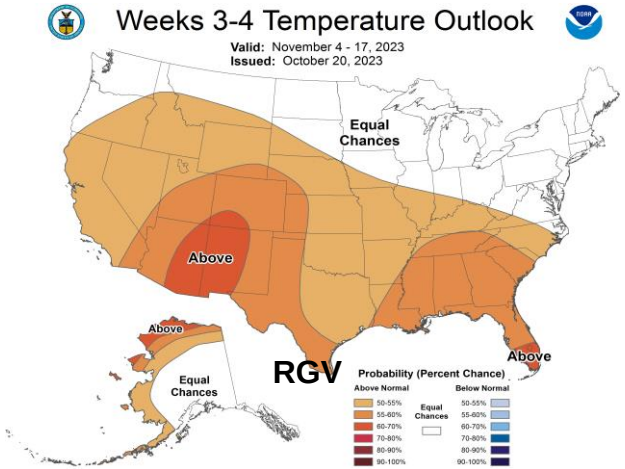
- Falcon remained largely steady in October, with a slight rise from **13.95%** to **14.2%** on October 24th . This level was at/near record lows for this date. The potential for El Niño-induced rains across the basin's headwaters would only increase levels incrementally, with the **best case a rise near 20 percent before year's end**.
- Amistad continued its slow drop through October, down to **29.1%** on the 24th (from **31.3%** at the end of September). Still **extremely (record) low**. Rains falling along the Pecos River/Devil's Creek during the last week of October may provide an incremental rise, but El Niño-induced rains might only be sufficient to bring levels between **35 and 40 percent**

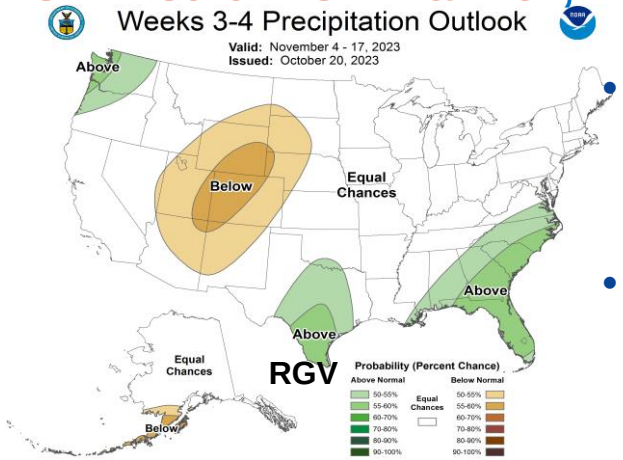
Water Conservation is (still) Key!

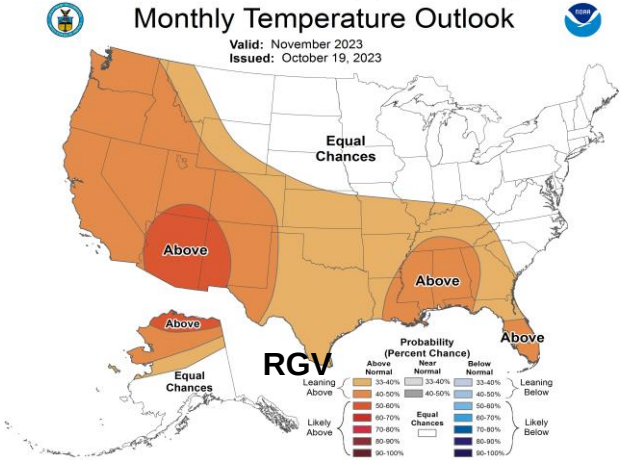


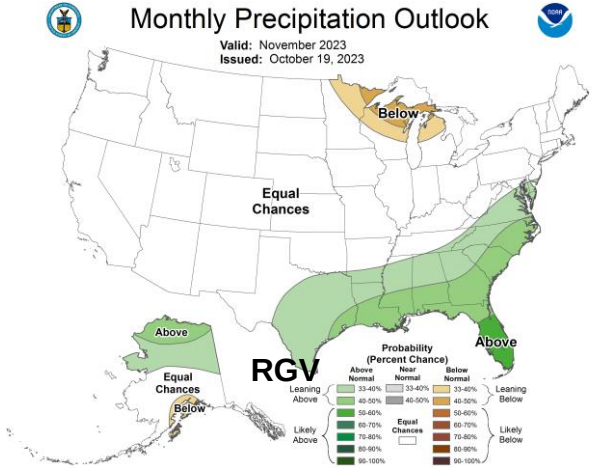
- With "Stage 2" Restrictions increased in August and more could be added in autumn. water conservation is critical.
- Learn more at the Texas Water Development Board's Conservation Page

November 2023: Confidence Low-Medium on Warmth; Medium on Rainfall





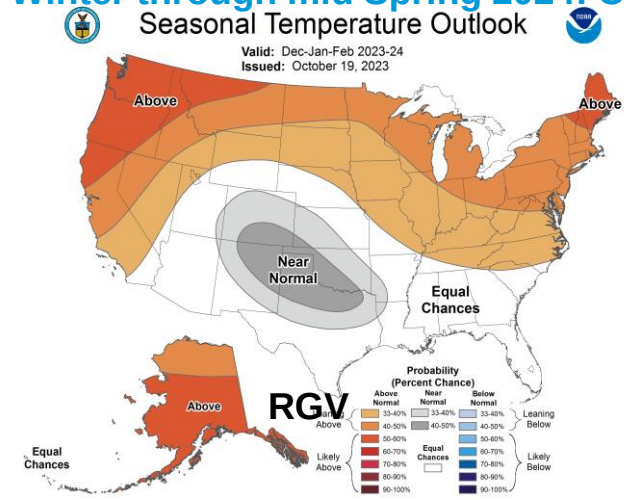


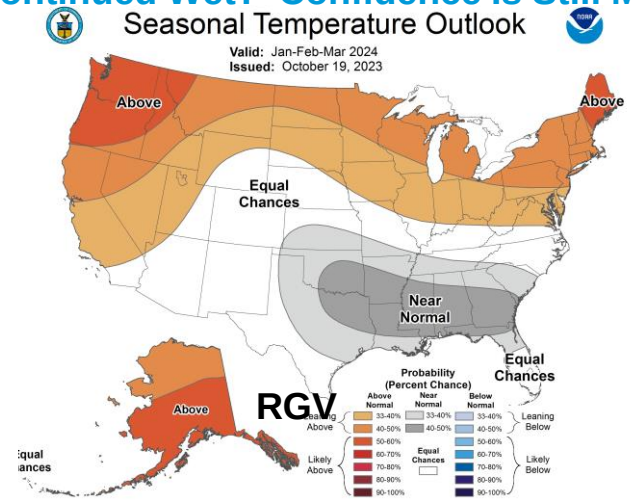


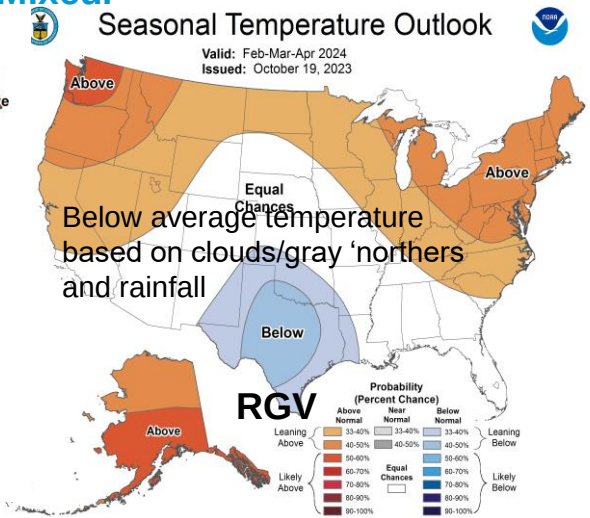
Bottom Line: The pattern will remain changeable, with more fronts and the potential for moderate rain events interspersed with warm and sunny periods.

Confidence is **medium for** rainfall in November for the RGV. Rain events mainly along fronts (or a late season tropical feed from the southwest Gulf/eastern tropical Pacific) **could quickly push values above monthly averages** (1 to 2 inches from west to east), while stronger fronts could push moisture away and be **followed by up to ten days of dry air, reducing monthly rain to below average.**

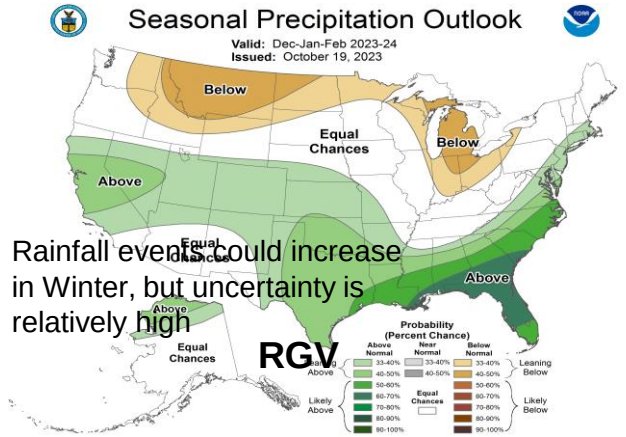
Winter through mid Spring 2024: Continued Wet? Confidence Is Still Mixed.



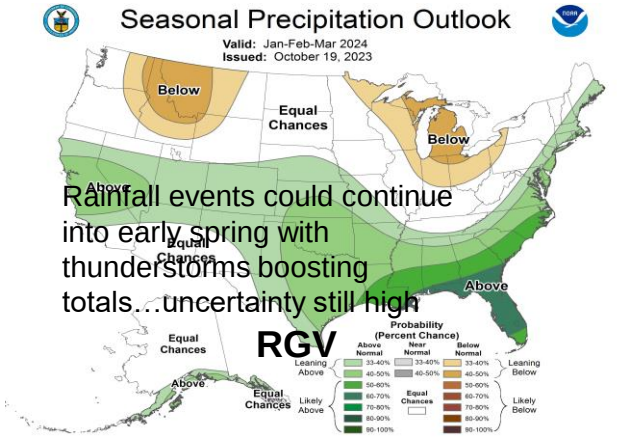




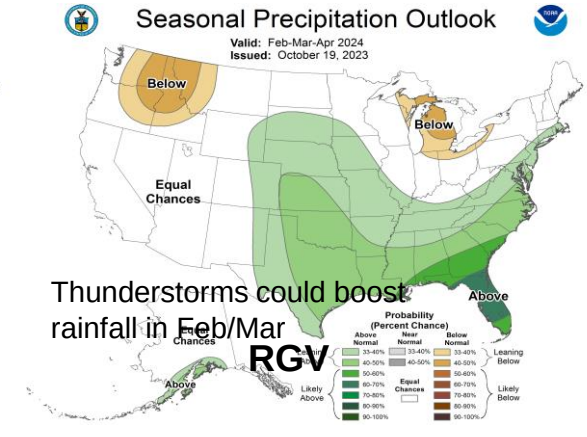
Below average temperature based on clouds/gray 'northers and rainfall



Rainfall events could increase in Winter, but uncertainty is relatively high

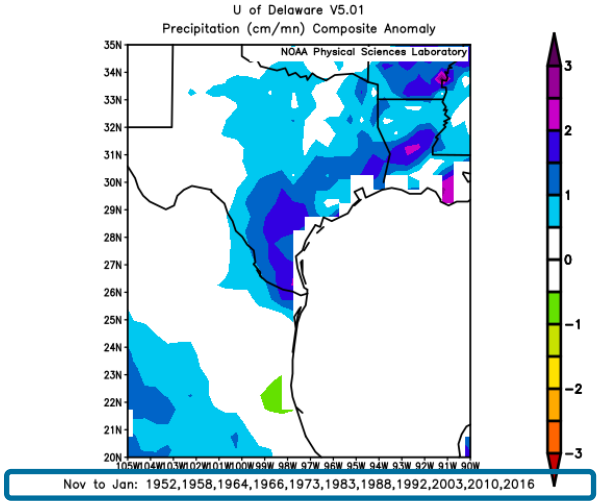


Rainfall events could continue into early spring with thunderstorms boosting totals…uncertainty still high

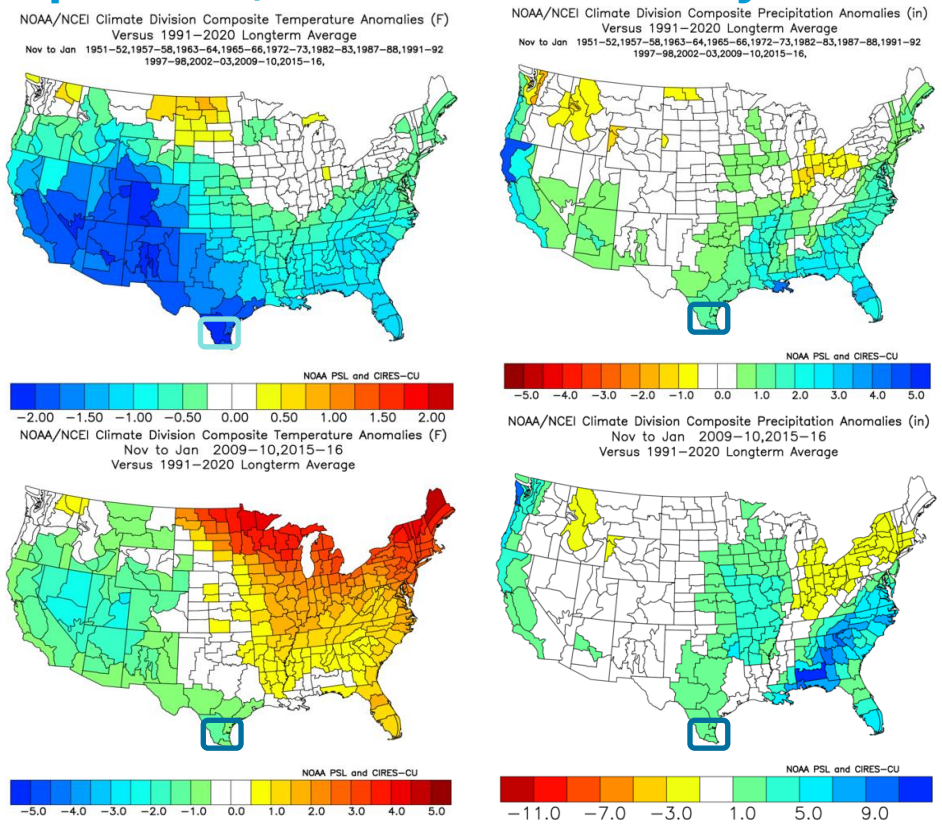


Thunderstorms could boost rainfall in Feb/Mar

Comparing Similar El Niño Episodes; November-January Periods



Composite departure from average rainfall for years where the Oceanic Niño Index (ONI) increased to moderate (1 to 1.4), strong (1.5 to 1.9), or “super” (≥2.0) levels. Cutoff of rainfall on the coast is a map (mask) issue; the anomaly extends to the coast.



- **Top:** Composite temperature (left) and precipitation (right) anomalies for moderate/strong/”super” El Niños in November-January, since 1950.
- **Bottom:** Same, except for most recent cases (2009 and 2015).

Bottom Lines

- Despite increasing confidence for more rainfall, sufficient inflows from Mexican reservoirs serving the Lower Rio Grande watershed are unlikely during the “cool” season. **Combined share of water in Amistad and Falcon should continue at or near Stage 2 triggers through winter.** Water **conservation, smart irrigation , and rainwater harvesting** are important actions to continue.
- **Drought/Dryness should remain but improve.** Future evolution will depend on rainfall directly on the RGV. Atmospheric moisture feeds along fronts should put a dent into the drought by one category. However, fronts with limited moisture followed by prolonged spells of warm weather with low humidity would limit improvements. Confidence is low on which outcome occurs, but moderate drought may continue into early winter, particularly in Hidalgo and Brooks County.
- There will be **cold fronts and cold snaps**, likely to favor occasional, rather than frequent, chilly drizzle events. Sharp changes of 30 to 60 degrees (apparent temperature change) from day to day are likely several times. “Feels like” temperatures could occasionally dip to or below 30. A hard freeze is unlikely, but one or two freezes are possible.
  - Pelicans roosting Bahia Grande north of the Gayman Bridge along SR-48 could be impacted following sharp ‘northers in late November through early January, with light rain/drizzle.
  - Tidal run-up to the dunes on barrier island beaches is possible in persistent east/northeast swell, if this develops, in November